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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,724	03/24/2004	Gregor McDowall	H0006427-1070	3716
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HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			EXAMINER	NGUYEN, TRAN N
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/807,724	MCDOWALL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tran N. Nguyen	2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 02 August 2005.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) \_\_\_\_\_ is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1, 5-9, and 13-14** are rejected under 35 U.S.C. 102(b) as being fully anticipated by **Costello (US 3,008,786)**.

**Costello** discloses a wedge-shaped member (20-21), configured to fit between core poles of a generator to restrain coil windings from moving under centrifugal force, the wedge-shaped member (20-21) comprising:

- a first plate (35 of wedge 20) having at least one through-hole (47);
- a second plate (35 of wedge 20) positioned opposite the first plate and positioned at an angle relative to the first plate (fig 5); and
- one or more reinforcing members (21) (figs 1-3) coupled between the first plate and the second plate and substantially perpendicular to the first plate and second plate;
- the second plate also includes at least one through-hole (47, fig 5) (*as recited in claim 5*);

**Costello** also discloses a synchronous electric machine, which inherently can function as a generator, comprising:

- a rotor frame (10);
- a first and second of core poles (12) coupled to the rotor frame;
- a coil (17) wound around the first core pole; and
- the wedge-shaped member (20-21) positioned between the first core pole and the second core pole to support the coils;

the first plate (37) abutting the first core pole, a second plate (37) abutting the second core poles, and one or more cross members coupled between the first plate and the second plate (fig 2) (*as recited in claim 6*);

wherein

the rotor frame (10) is substantially cylindrical and has a first axis of rotation (parallel to shaft 11), the first and second of core poles (12) extending radially from the rotor frame along the length of the rotor frame (fig 1, 3) (*as recited in claim 7*);

a second coil (17) wound around the second core (fig 1) (*as recited in claim 8*);

the first core pole has a core pole tip (15) that is wider than the core pole (12), the core pole tip configured to secure the wedge-shaped member in place (fig 1-2) (*as recited in claim 9*);

the first plate , the second plate of the wedge (20) and the one or more cross members (21) define one cavity within the wedge-shaped member (fig 2) (*as recited in claim 13*);

the first plate includes one or more passages (47) extending from a first surface to a second surface of the first plate (*as recited in claim 14*).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 6-9, and 13-14 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Costello (US 3,008,786) in view of ordinary skills of a worker in the art.**

**Costello** discloses a wedge-shaped member (20-21), configured to fit between core poles of a generator to restrain coil windings from moving under centrifugal force, the wedge-shaped member (20-21) particularly one or more reinforcing members (21) (figs 1-3) coupled between the first plate and the second plate and substantially perpendicular to the first plate and second plate.

However, one may argue that such reinforcing members (21) are not at the exact perpendicular position with respect to the first plate and the second plate and substantially perpendicular to the first plate and second plate.

Those skilled in the art would understand that the position of the reinforcement element may be varied based on the positions of the first and the second plate because these two plates are placed at an angle relative to one another while the reinforcing member is located therebetween the two place. Thus, one skilled in the art would have the necessary mechanical skills to rearrange the position of the reinforcing element (21) so that it is substantially perpendicular or exactly perpendicular to the first and second plates in order to ensure the mechanical support of the reinforcing elements between the first and second plate so that they co-operatably act as a strong slot wedge for supporting the coil winding.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the **Costello**'s slot wedge member so that reinforcing element so that it is substantially perpendicular to the first and second plates in order to ensure the mechanical support of the reinforcing elements between the first and second plate so that they co-operatably act as a strong slot wedge for supporting the coil winding.

Furthermore, all through the specification's detailed description of the present invention, the applicant fails to address the specific perpendicular arrangement of the reinforcing members coupled between the first plate and the second plate; also, the applicant fails to discuss how such perpendicular positioning the reinforcing member between the two plates is being significant.

Therefore, it would have been obvious to an artisan to position the reinforcing member at any suitable manner to provide support for the first and second plates so that co-operatably these elements act as the coil slot wedge supporting the winding. It would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange reinforcing element so that it is substantially perpendicular to the first and second plates. This is obvious because it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

3. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Costello**, as applied in the rejection of the base claims, in view of **Pittard et al (US 6,113,024)**.  
**Costello** discloses the claimed invention, except for the added limitation of the end band coupling to the rotor frame for securing the slot wedge thereto.  
**Pittard**, however, teaches that a typical wound generator rotors use a center wedge to retain the copper coil (winding) in the rotor slot. The center wedge generally is held in place by one of different techniques, one of which is more commonly is the use of rotor end bands (not shown). Pittard teaches that slot wedge retains winding in place and itself is held in place by rotor end bands (not shown) and the use of rotor end bands to secure the slot wedges is well known in the art (Pittard's col 1, lines 20-30, col 4, lines 41-44).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the machine by providing end bands to secure the wedges in place during the rotation of the rotor, as taught by Pittard. Doing so would provide a mechanical means to ensure the abutment of the wedges in place and such use of end bands is well known in the art.

4. **Claims 1-15, and 17-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kjeer (US 6054790)** in view of **Sigmund et al (US 2,400,576)**.  
**Kjeer** discloses a electric machine, which can function as a generator, comprising:

a rotor frame (16);  
a first and second of core poles (18) coupled to the rotor frame;  
coils (20) wound around the first and second core poles; and  
the rotor frame is substantially cylindrical and has a first axis of rotation (14), the first and second of core poles extending radially from the rotor frame along the length of the rotor frame (figs 1-3);  
the wedge-shaped member (24) positioned between the first core pole and the second core pole to support the coils, and having a trapezoidal cross-section area (fig 3);  
the first plate (26) abutting the first core pole, a second plate (28) abutting the second core poles,  
the first core pole has a core pole tip that is wider than the core pole, the core pole tip configured to secure the wedge-shaped member in place (fig 1-3)  
a third plate (30) having a first longitudinal edge and a second longitudinal edge, the first longitudinal edge of the third plate (30) coupled along a first longitudinal edge of the first plate (26) and the second longitudinal edge of the third plate coupled to a first longitudinal edge of the second plate (28) (fig 3), i.e., the third plate position along the sort side of the trapezoidal wedge-shaped member; and,  
the first and second plates (26, 28) are substantially rectangular and one reinforcing members (32) that has a "T" shaped plate extending from a second longitudinal edge of the first plate (26) and a second longitudinal edge of the second plate (28), via the horizontal portion of the "T" shaped plate, and extending to the third plate (30), via the vertical portion of the "T" shaped plate;  
the first plate (26), the second plate (28) and the cross members (32) define one cavity within the wedge-shaped member (fig 3).

**Kjeer** substantially discloses the claimed invention, except for the following:

*(a) the first plate includes one or more through holes, i.e., one or more passages extending from a first surface to a second surface of the first plate, and a bonding material impregnated therethrough* (as recited in claims 1, 4-5, 14-15 and 20);

*(b) the third plate has a curvature that conforms to the rotor frame* (as recited in claims 12 and 19).

***Regarding the limitations of the subsection (a) herein,*** Sigmund, however, teaches a wedge-shaped member having the first and second plates configured with through holes (49, figs 7-8), i.e., one or more passages for impregnated bonding material passing therethrough to secure the coils.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the machine by providing the through holes or passages in the plates of the wedge-shaped member, as taught by Sigmund. Doing so would provide means for impregnated bonding material passing therethrough to secure the coil, the wedge-shaped member to the core.

*Regarding the limitations of the subsection (b) herein*, Kjeer does disclose a third plate incorporating with the first and second plates of the wedge member to secure the winding of the rotor poles. This is the essential disclosed component of the slot wedge. Those skilled in the art would understand that it would have been obvious to an artisan with necessary mechanical skills to modify the disclosed essential component by changing size or shape for enhanced abutment and support.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the disclosed third plate of the wedge-shaped member by changing the shape thereof to have a curvature that conforms to the rotor frame. Doing so would enhance abutment of the wedge on the rotor frame, and this modification would require only necessary skills in the art because a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (emphasis added).

5. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kjeer and Sigmund**, as applied in the rejection of the base claims, in view of **Pittard et al.**

The **Kjeer** and **Sigmund** ref combination discloses the claimed invention, except for the added limitation of the end band coupling to the rotor frame for securing the slot wedge thereto. **Pittard**, however, teaches that a typical wound generator rotors use a center wedge to retain the copper coil (winding) in the rotor slot. The center wedge generally is held in place by one of different techniques, one of which is more commonly is the use of rotor end bands (not shown). Pittard teaches that slot wedge retains winding in place and itself is held in place by rotor end bands (not shown) and the use of rotor end bands to secure the slot wedges is well known in the art (Pittard's col 1, lines 20-30, col 4, lines 41-44).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the machine by providing end bands to secure the wedges in place during the

rotation of the rotor, as taught by Pittard. Doing so would provide a mechanical means to ensure the abutment of the wedges in place and such use of end bands is well known in the art.

### *Response to Arguments*

Applicant's arguments filed 8/2/05 have been fully considered but they are not persuasive because of the following:

*The applicant argues that the refs Costello (stand-alone), as well as the combination of refs: Kjeer, Sigmund, and Pittard do not disclose the claimed invention, particularly that the limitation of the reinforcing members coupled between the first plate and the second plate and substantially perpendicular to the first and second plate.*

During patent examination, the pending claims must be “given >their< broadest reasonable interpretation consistent with the specification.” > In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).

And,

When not defined by applicant in the specification, the words of a claim must be given their plain meaning. In other words, they must be read as those of ordinary skill in the art would interpret them. > Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001).

With this in mind, the applicant attention is drawn to the claimed language that reciting “one or more reinforcing members coupled between the first plate and the second plate and substantially perpendicular to the first and second plate”.

The term "substantially" is defined as: being largely but not wholly that which is specified (Merriam-Webster Dictionary) or considerable in amount, value, or worth (Webster's Dictionary).

Thus, the limitation of *the reinforcing members coupled between the first plate and the second plate and substantially perpendicular to the first and second plate*" is broadly read as:

*"the reinforcing members coupled between the first plate and the second plate and positioned considerably perpendicular (but not wholly at the exact 90 degree right angle) to the first and second plate .*

With this interpretation of the claimed language in mind, the applicant's attention is now drawn to Costello's figs 1-2 that show the reinforcing member (21) is abutted between the first and second plates (35) of wedge (20), notice that Costello's figs 1-2 shows the reinforcing member (21) is position at the top edges of the plates (35) placing the reinforcing member (21) substantially perpendicular to the first and second plate.

Also, Kjeer figs 3-4 shows that the wedge-shaped member (24) with "T" shaped reinforcing member positioned between the first plate (26) and a second plate (28), wherein the horizontal side (32) of the "T" shaped reinforcing member is) substantially perpendicular to the first and second plate.

Thus, the applicant argument is considered a false allegation.

The refs Costello (stand-alone), as well as the combination of refs: Kjeer, Sigmund, and Pittard do disclose the claimed invention, particularly that the limitation of the reinforcing

members coupled between the first plate and the second plate and **substantially perpendicular** to the first and second plate.

Furthermore, all through the specification's detailed description of the present invention, the applicant fails to address the specific **perpendicular** arrangement of the reinforcing members coupled between the first plate and the second plate; also, the applicant fails to discuss how such perpendicular positioning the reinforcing member between the two plates is being significant. Furthermore, the drawings fail to clearly illustrate that the reinforcing member (102) being right angle perpendicular to the first and second plates. Fig 1 shows that the vertical edges of the first and second plate appear to be perpendicular the horizontal edge of the reinforcing member. However, (still in fig 1) at the angular slanting inner sides of the plates and the planar surface of "V" shaped reinforcing member, the perpendicular (right angle) it is not clearly illustrated between the reinforcing element and the plates.

Therefore, it would have been obvious to an artisan to position the reinforcing member at any suitable manner to provide support for the first and second plates so that co-operatably these elements act as the coil slot wedge supporting the winding.

In conclusion, the rejections are valid and hereby maintained.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE** MONTHS from the mailing date of this action. In the event a first reply is filed within **TWO** MONTHS of the mailing date of this final action and the advisory action is not mailed until after

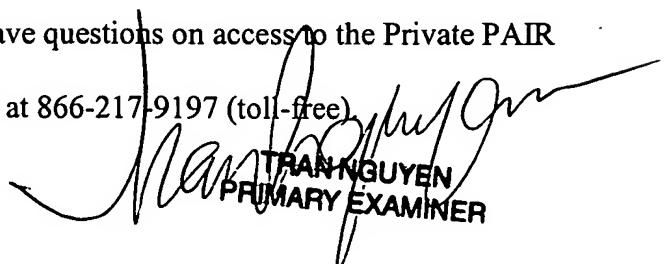
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
TRAN N. NGUYEN  
PRIMARY EXAMINER